

USAWC STRATEGY RESEARCH PROJECT

FUTURE AIRLIFT REQUIREMENTS

by

Lieutenant Colonel James W. Herron
United States Air Force

Colonel Scott Voelker
Project Adviser

This SRP is submitted in partial fulfillment of the requirements of the Master of Strategic Studies Degree. The U.S. Army War College is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools, 3624 Market Street, Philadelphia, PA 19104, (215) 662-5606. The Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation.

The views expressed in this student academic research paper are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.

U.S. Army War College
CARLISLE BARRACKS, PENNSYLVANIA 17013

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE 18 MAR 2005		2. REPORT TYPE		3. DATES COVERED -	
4. TITLE AND SUBTITLE Future Airlift Requirements				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) James Herron				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Army War College, Carlisle Barracks, Carlisle, PA, 17013-5050				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT See attached.					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES 22	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

ABSTRACT

AUTHOR: Lt Col James W. Herron

TITLE: Future Airlift Requirements

FORMAT: Strategy Research Project

DATE: 18 March 2005 PAGES: 22 CLASSIFICATION: Unclassified

The paper is an analysis of how current airlift requirements are greater than current capabilities. It will show airlift requirements will continue to increase in order to compliment the Army's current transformation. The current Department of Defense policies of becoming a smaller more agile and lethal force will also continue to stress airlift capability. Finally, it shows President Bush's plan to reduce the number of troops overseas will continue to increase airlift requirements on an already over tasked force.

TABLE OF CONTENTS

ABSTRACT.....	III
FUTURE AIRLIFT REQUIREMENTS	1
CURRENT REQUIREMENTS.....	2
ARMY REQUIREMENTS	4
RETURNING ASSETS TO THE UNITED STATES	5
AIRCRAFT REQUIREMENTS	6
WHAT ARE THE RIGHT REQUIREMENTS?	9
RECOMMENDATION	11
CONCLUSION	11
ENDNOTES	13
BIBLIOGRAPHY	15

FUTURE AIRLIFT REQUIREMENTS

Air Force Doctrine Document 2-6, Air Mobility Operations states;

US national interests drive the national security strategy of "global engagement." Our dependence on political, economic, and military partners demands a military capable of operating on a global basis. Rapid global mobility is essential to that capability. This is especially true today where a smaller, more continental United States (CONUS) based force must be able to rapidly respond to unpredictable threats wherever and whenever they occur. Quick and decisive responses can diffuse crises before they escalate, deter further aggression and, in some cases, defeat an adversary before it can solidify its gains. Air mobility forces provide joint force commanders (JFCs) with the responsive global reach necessary to achieve US national objectives.¹

The purpose of this paper is to show current airlift requirements are greater than current capability. Those requirements will continue to increase as the Army becomes more agile and the United States continues its worldwide fight against terror while reducing the number of forces stationed outside the United States.

In order to accomplish Air Force goals driven by ever changing world events, the Air Force began its transformation after the end of the Gulf War. In many ways, the Air Force was forced to change when Iraq invaded Kuwait in August of 1990. At that time, the Air Force was not prepared to move large numbers of troops and equipment by air in the time required to stop the Iraqi invasion from moving farther south. Neither the U.S. Air Force nor the U.S. Army was prepared. The Army planned to move the majority of its equipment by sealift and through pre-positioned ships which were strategically located throughout the world. While this is a very effective method of moving equipment to the theater of operation, it causes the problems of long lead times getting the equipment to the port and matching the units with their equipment.

After September 11, 2001, the Army determined it had to transform in order to meet the ever changing threat it faces in the world today. According to, "How the Army Runs," the Army needs to improve its capabilities so that it is more lethal, survivable, mobile and able to adapt to the ever changing threats to the Nation's security, and the missions which promote our country's interests at home and abroad.² The National Military Strategy's doctrine of defending the homeland, supporting four regions in the world, fighting two near simultaneous wars and decisively winning one of those wars is forcing rapid change in both the Air Force and Army.³ With their transformations, the Air Force and the Army have to jointly determine the right type of equipment to accomplish all of these goals.

To build a more mobile military force, the Army needs to develop a force structure and equipment to support the new structure which can then be transported by aircraft in the Air

Force inventory. Concurrently, the Air Force must develop and procure aircraft which accommodate all the different services airlift requirements. History has shown that the services have not worked together when developing systems, resulting in numerous systems which were incompatible when used in the field by their units. The Stryker vehicle which was not able to fit into a C-130 unless modified, and radios used by the Army not being compatible with radios in Air Force aircraft are two excellent examples of these types of equipment.

According to the Mobility Requirements Study 2005 the Air Force is required to move 54.5 million ton miles per day (MTM/D) to support wartime requirements.⁴ The million ton miles per day measurement is a commonly accepted measure of performance across the transportation industry, which reflects how much cargo can be delivered over a given distance, in a given period of time.⁵ Commander of US Transportation Command (USTRANSCOM) USAF General John W. Handy emphasizes that with the new Quadrennial Defense Review, the new National Military Strategy and new homeland defense requirements, airlift needs and the ability to support all those requirements will have to be seriously evaluated by USTRANSCOM. According to USTRANSCOM, two nearly simultaneous major theater wars require 51.1 MTM/D of strategic airlift support, while the remaining 3.4 MTM/D of strategic airlift is required to support other high priority missions such as contingencies, special operations, allied support and combatant commander needs for JCS priority.⁶

CURRENT REQUIREMENTS

In 1993, President Clinton's administration established a requirement for the United States to be able to move 49.7 MTM/D through strategic airlift. This standard was based on the US military strategy of simultaneously fighting two regional wars.⁷ When the Bush administration took over, it developed Mobility Requirements Study 2005 (MRS-05) which increased that 49.7 to 51.1 MTM/D to meet the requirements of the two regional wars while also requiring another 3.4 MTM to accomplish special operations missions, allied support, and combatant commanders JCS priority one missions.⁸ Since the spring of 2003, the Air Force has been supporting two major theater wars in Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF). The biggest benefit to USTRANSCOM has been that these two contingencies occurred in the same region. When OEF began some unique airlift requirements were encountered which had been completely unplanned for. Since Afghanistan was a hostile nation lacking water ports, the majority of the transportation requirements were brought in by military airlift, thus increasing the amount of airlift required to accomplish the mission. Pre-positioned

ships had to go into seaports and off-load their cargo. The cargo was then transported it to a nearby airport where the supplies were then flown into Afghanistan.

Currently, USTRANSCOM is scheduling an average of 400 sorties per day with spikes up to 450-500 sorties per day according to General Handy. The general emphasized that several years ago the average sorties per day was about 250.⁹ Even with these sortie rates the Air Force and Air Mobility Command do not meet the current 54.5 MTM/D airlift requirements which were set in 2000. The 54.5 MTM/D figure underestimates the real requirements which according to Gen Handy have spiked to as much as 67 MTM/D.¹⁰ The Air Force is currently asking Deputy Defense Secretary Paul Wolfowitz for time to complete a new Mobility Requirements Study. According to Lt Gen Bruce Carlson, head of the Joint Staff's force Structure division, the results need to be based on the new Quadrennial Defense Review (QDR) which has established new scenarios for conflicts and which may require a greater need for airlift.¹¹ The airlift requirements have also increased with the requirement for homeland security and a response to a crisis in the United States. According to Gen Handy "the initial review of the new strategy to the conclusion that the strategic mobility requirements will be even more demanding than MRS-05, in part due to the likelihood of a homeland defense response occurring concurrently with major wars overseas."¹²

Presently, the Air Force provides airlift with six different types of aircraft. The C-130 Hercules is the smallest of the aircraft and is primarily used for tactical or inter-theater airlift. It is also the most abundant aircraft in the inventory numbering 514 across the Air National Guard, Air Force Reserve and the Active Duty Air Force.¹³ The C-141 Starlifter is the next largest aircraft, but there are only 20 left in the Air Force Reserve inventory. The C-141 is currently being phased out of the inventory and is being replaced by the C-17 Globemaster III. The C-17 is the newest, most flexible cargo aircraft to enter the airlift force. Its unique capabilities have made the Air Force convinced it is the aircraft of the future. The C-17 is capable of strategic delivery of troops and all types of cargo, while able to perform tactical airlift and airdrop missions when required.¹⁴ The Air Force and Air National Guard currently have 126 C-17's and the Air Force's current plan is to buy another 54 aircraft for 180 total aircraft. The fourth and largest aircraft is the C-5 Galaxy. The C-5 has a tremendous payload capability and provides intertheater airlift in support of the United States national defense. The Air Force components currently have 112 C-5's in their inventories.

The last two aircraft used to deliver cargo are actually air refueling aircraft which also have cargo capability. The KC-135 is a modified Boeing 707 aircraft which is capable of carrying small loads into a theater. Currently there are 530 KC-135's dedicated primarily to aerial

refueling. The KC-10 is the military version of the McDonnell Douglas DC-10. It is modified to perform in-flight refueling. The KC-10 has the capability to carry cargo and personnel, making it the most efficient aircraft at delivering Air Force fighter units to their destination. There are only 59 KC-10 aircraft in the inventory making them a very sought after asset.

ARMY REQUIREMENTS

According to the article Alternative Approaches to Army Transformation "Until the problem of slow Army deployment rates are solved, the world's best military runs the risk of performing poorly or failing to achieve national political objectives in future crises."¹⁵ During Desert Storm, it took four months to put forces into theater, and be prepared for the ground offensive. Furthermore, the Army, which is still heavily committed in both Afghanistan and Iraq, was not able to deploy its troops and equipment fast enough.

The United States Army is currently undergoing a transformation in which it will provide future forces that are more lethal, survivable, and mobile both strategically and tactically.¹⁶ The Army is also reducing the size of the fighting force from the division level down to the brigade level. In the process of accomplishing this change, the Army is attempting to determine the correct mix of troops and equipment that will prove to be the most effective fighting force. For the Army to accomplish its transformational goal of rapid global mobility, the Army needs to decide if it is trying to reduce its overall weight or just redistribute the weight.¹⁷ For the army to reduce the overall weight in its equipment, new technology, such as a lightweight composite material will need to be developed. This material needs to reduce the weight of the equipment while still improving the survivability of the equipment against different threats. If this new technology is not soon available, the only real choice the army has is to redistribute its equipment to reduce the weight.

Recently, the Army developed the Stryker vehicle as a combat vehicle which would improve the Army's mobility and provide it with greater firepower than an infantry unit. These vehicles are deployed as Stryker brigade combat teams (SBCT). In the original design contract the Stryker was required to be able to drive on and drive off a C-130 aircraft. Unfortunately, as the design progressed and changed due to requirements the vehicle that was approved did not fit in the C-130 aircraft without removing vehicle components. The Army knew the internal dimensions of the C-130 aircraft, so it should not have been difficult to ensure this requirement was met. The Army also knew the C-130 was the primary aircraft for moving men and equipment inter-theater, making it extremely difficult if not impossible to move the SBCT's throughout the theater of war. The Army did not think of the strategic implications this would

have on a conflict if their equipment did not fit on the aircraft that they planned for to provide lift. The Army loses combat capability because the current design of the Stryker is not able to drive off the aircraft and proceed directly into combat. Now the Army has to offload the Stryker and take extra time preparing it for combat, thereby reducing its effectiveness. To counter this mistake, the Air Force now has to divert some of its high demand C-17's to move the SBCT's throughout the theater. This takes the desperately needed C-17 away from performing strategic airlift and forces it into a tactical airlift role. When this occurs it reduces the Air Force's strategic airlift capability. With less aircraft performing strategic airlift, the amount of other required theater supplies is reduced thereby affecting not only the SBCT units, but other Army units and other services which will be in dire need of those supplies and equipment.

Reducing the size of the units to deploy does not necessarily reduce the number of airlift sorties required to transport the units into the theater. Currently a heavy armored Corps weighs about 1,000,000 tons or 2,000,000,000 pounds. A C-130 can carry a maximum of 42,000 pounds. Based on these numbers, it would take 47,620 C-130 sorties, 11,710 C-17 sorties, or 7400 C-5 sorties just to move the Corps into theater. The C-130 is not able to carry all of the Army's equipment either, so some of it would have to go by ship, C-17, or C-5. The Air Force only has 112 C-5's and if every aircraft was able to fly everyday and the aircraft accomplished nothing else it would still take 66 days to move the heavy corps into theater. This is not a very rapid mobile force. The current plan calls for reducing the heavy Corps down 7% to 930,000 tons.¹⁸ Even with this reduction the heavy division requires 6890 C-5 sorties or 62 days to arrive in theater.

In the process of developing a more mobile Army, the Army is making its units smaller and more modular. This is so that it can pick and choose which type of units will be deployed based on requirements and need. Accomplishing this allows the Army to decide which types of units need to be sent, such as a Military Police element, instead of sending the complete brigade. The Army can also determine which units need to be airlifted to arrive in theater immediately and which ones can be moved to the theater by other transportation modes for later arrival.

RETURNING ASSETS TO THE UNITED STATES

In 2004, President Bush announced that the United States would withdraw 70,000 troops from Europe and Asia as part of a military realignment. At present the United States has over 700 hundred military bases worldwide and approximately 370,000 troops deployed overseas.¹⁹ Of the 370,000 approximately 120,000 are in Europe, 120,000 and in the Asia-Pacific region and 130,000 are in the Middle East Region. If this realignment does occur it would mean two

Army Divisions would leave Europe and one Division would leave Asia. These returning 70,000 troops do not include the 100,000 to 130,000 troops who would return from the Middle East once OEF and OIF are completed.

As the troops return from overseas over the next ten years airlift requirements will continue to increase. If the United States still desires the ability to fight two regional conflicts, then USTRANSCOM must be able to deliver the troops and equipment anywhere in the world a conflict occurs. If a conflict occurs in Europe and the Combatant Commander requires more troops than currently stationed in Europe, due to the reductions, then more troops will have to be deployed to Europe from the CONUS. The deployment of troops which have been moved from overseas to the U.S. will increase airlift requirements which have to be prepared for by USTRANSCOM to accomplish the mission. Supplies are easier to move when they are closer to the conflict than when they are farther away. The current conflicts in Afghanistan and Iraq are excellent examples. Troops who were stationed in Germany were only 3000 miles from the conflict while those in the United States were 6000 miles away. This meant Air Mobility Command (AMC) could move twice as many troops from Europe to the conflict as they could from the United States in the same amount of time. AMC aircraft requirements also change significantly as the distance to the conflict changes. An aircraft flying at 600 miles per hour can make it round trip from Europe to the Middle East in ten hours of flying time, allowing the aircraft to make 2 trips per day. The same aircraft would only be able to make one trip from the United States and back in that same day, thus reducing the aircraft utilization rate.

One of the benefits of returning 70,000 troops and their families back to the United States would be the reduction in the number of supply requirements to those forces stationed overseas. This would reduce the number of aircraft required for re-supply missions to areas which are not involved in one of the two major theater wars.

AIRCRAFT REQUIREMENTS

AMC and USTRANSCOM have spent a considerable amount of study and analysis trying to determine the correct amount of airlift required to accomplish the National Military Strategy requirements. The Defense Planning Guidance (DPG) calls for a 1-4-2-1 Strategy. This strategy means we will defend the homeland, deter forward in four geographical regions, swiftly defeat the efforts in two Major Contingency Operations (MCO) and win decisively in one of those MCO's.²⁰ To accomplish these goals USTRANSCOM must be able to move the 54.5 MTM/D of cargo required by the Mobility Requirements Study 2005. "The Chairman of the Joint Chiefs of Staff, the Service Chiefs and CINC's have reviewed the MRS-05 study, and they

supported the establishment of the requirement of 54.5 MTM/D of airlift capability as the minimum moderate risk capability to support the national military strategy,"²¹ according to an unclassified version of the MRS-05 study. Under various credible scenarios though, the total airlift requirements reached as high as 67 MTM/D, according to the MRS-05 report.²²

With the requirement now defined, AMC must determine the correct number of aircraft necessary to meet those requirements. Unfortunately, trying to determine those numbers and acquire the money needed to procure those assets has become difficult. At present, the C-141 is being retired and replaced by the C-17. The current budget has the Air Force replacing the original 270 C-141's with a current planned buy of 180 C-17's. Looking at this from a purely tonnage standpoint, the current 180 C-17's should be enough aircraft. But with fewer aircraft the movement of cargo to different regions around the world will take longer. Current tonnage requirements have been increasing exponentially compared to previous tonnage requirements which existed during the past few decades the C-141 has flown. An example that illustrates the true cost of less aircraft is one in which 34 tons of cargo must be moved to Japan and an additional 34 tons of cargo to Europe. To accomplish this two C-141's could go in opposite directions and have all the cargo delivered in two days. Even though the C-17 has twice the cargo capability, the same load would take the C-17 eight days to deliver because it would first have to fly to Europe. Then the C-17 would fly back to the United States to pick up the cargo for Japan and deliver it to its destination. With these factors it is easy to see why 180 C-17's may not be enough. Even though the C-17 has more than double the cargo capability of the C-141, buying 180 C-17's versus the 270 C-141 aircraft the Air Force had in the inventory, the MTM/D requirement will not be able to be met when the two regional conflicts are on the opposite sides of the world.

The next aircraft to factor in is the C-5 Galaxy. Most of the current C-5's have been in service for more than 30 years. A recent study showed the C-5 has only used up a third of its airframe service life, and could stay in service for another 20 years with some upgrades.²³ The C-5 reliability rates have been continually decreasing over the last few years, resulting in a huge decrease in its cargo carrying capability. Reliability has been so abysmal that AMC has tasked two C-5's for the highest priority missions just to ensure the mission is completed on schedule. The recent Air Force study of the remaining C-5's determined the two upgrades would increase the C-5's reliability rate from 65 to 75 percent, the AMC standard.²⁴ The upgrades include an avionics package which would bring the C-5 into compliance with the standards required by the International Civil Aviation Organization (ICAO) as well. These standards must be met by all aircraft flown in any area that requires compliance with the ICAO standards, which is

everywhere the military flies. The second upgrade would include new pylons and engines. By replacing the engines the C-5 would also receive many new components such as hydraulic and electrical systems which also needed to be replaced due to their low reliability. The Air Force recently retired fourteen C-5's which were considered the least reliable in the inventory. The Air Force looked at the history of every C-5 in the inventory and determined the C-5A's with the largest number of significant maintenance problems and decided it would be better in long term cost savings and overall reliability if those planes were retired.

Another issue all the services must address is the importance of the C-5 to the whole system. Currently, the Air Force can upgrade four C-5's for the cost of one C-17, and can modify about 12 C-5's per year during normal maintenance, creating no shortage of airlift in the process.²⁵ These upgrades are necessary because the loss of the C-5 will affect all of the services. For example pieces of equipment like the Army's scissors bridges and the Navy's special operations assault boats can only be flown on a C-5. While this occurs now the Army is redefining its equipment, as it originally planned for the Stryker, so it is capable of fitting in the C-130 aircraft. This may reduce the need for the C-5. The C-5 and its unique ability to carry both cargo and personnel on the same flight reduces the time it takes to move a unit into action. The C-5 has twice the capacity of the C-17. It can deliver a unit faster and for less cost than a C-17. The Air Force did not build the C-17 to replace the C-5 and will not be able to handle all airlift requirements without both aircraft for the foreseeable future.

The C-130, the last of the AMC airlift triad, will be used as the inter-theater airlift aircraft well into the future. The capabilities of the C-130 make it the best asset for moving troops and equipment throughout the theater. The C-130 is able to land on shorter runways and highways if needed. In the current Iraqi environment where numerous land mines and explosives were disrupting re-supply routes and killing many soldiers, the Air Force Chief of staff General John Jumper authorized the Air Force to move supplies with C-130's. Even though this will cost much more it will be able to save lives making it one of the Air Force's highest priority missions. The Army has been trying to design its equipment to fit in the C-130. So, a unit can easily be moved wherever it is required in the theater. So far, this has not been the case as was shown earlier with the example of the Stryker vehicle which does not fit in the C-130 without modifications.

The Army is currently looking at developing its own aircraft to provide inter-theater airlift for its men and equipment. This program is being developed because the Army has had some problems depending on the Air Force to provide airlift assets when it needs them. Under the current system, the Army has to request movement through USTRANSCOM to move its

equipment. This action can take a couple of days to accomplish if there are not any aircraft free to accomplish the mission; or there are not any aircraft close enough to complete the movement. By the time an aircraft is available the movement of the supplies might be too late to accomplish the Army mission. The movement of parts to fix a helicopter which has broken down at an austere airfield is an excellent illustration of this problem. An Army with its own transports could move the parts needed by itself, and would not have to rely on the Air Force for its minor internal requirements.

WHAT ARE THE RIGHT REQUIREMENTS?

The Mobility Requirements Study 2005 states the minimum acceptable requirement is 54.5 MTM/D.²⁶ According to General Handy; Air Mobility Command has recently had spikes of up to 67 MTM/D and with the Global War on Terrorism expected to continue for some time, those spikes are likely to continue if not increase in the future.²⁷ The object then for USTRANSCOM and the Air Force is to determine the right mix of aircraft to be able to perform its mission during times of crisis, while not having so many aircraft that it costs too much to maintain and support them.

According to General Handy, AMC needs at least 222 C-17's to be built to accomplish the current 54.5 MTM/D mission. If the Mobility Requirements Study currently under review raises the tonnage requirement to 60 MTM/D or higher, then the C-17 requirement will increase to a number closer to 300 C-17's. This decision needs to be made by the spring of 2005 as part of the fiscal year 2006 budget to keep aircraft production lines open.²⁸

While continuing to increase the number of C-17's in the fleet, the Air Force will have to continue to modernize the C-5 fleet to increase its reliability, while at the same time not losing its huge capability. Even as the C-17 proved its mettle in both Afghanistan and Iraq, the C-5 slowly plodded its way along and brought nearly half of all cargo to the two countries during both Operation Enduring Freedom and Iraqi Freedom.²⁹ As long as there is equipment required by the services which can only fit in the C-5 the Air Force will not be able to eliminate the C-5 without causing a ripple effect throughout all branches of the service. This shows how important both aircraft are to the continued mobility capabilities of the US Military.

While the military portion of the 54.5 MTM/D requirements continues to be improved, the civilian portion needs improvement too. The Civil Reserve Air Fleet (CRAF) consists of civilian transport and passenger aircraft which are activated by the Commander of USTRANSCOM or the President. In return the government ensures the carriers receive government contracts to provides services when the fleets are not activated. These civilian carriers provide both their

employees and equipment to the government in time of need. The CRAF currently supplies about 21 MTM/D of the airlift requirement. Unfortunately, the civilian aircraft do not have all of the same capabilities as military aircraft. Thus, they are limited in some of their functions. For example none of the CRAF aircraft are capable of loading and unloading cargo without ground support equipment in place. This limits what can be placed in these aircraft and where the aircraft can actually fly. Many of the CRAF aircraft can also carry more cargo than the Air Force aircraft. CRAF aircraft do not have the drive on drive off capability nor the spacious cargo compartments the military aircraft have. These factors limit the type of cargo that can be placed in the CRAF fleet. At the same time the CRAF fleet is much better prepared to carry personnel than any of the military aircraft. Based on these facts the CRAF fleet is much better suited to flying re-supply and passenger movement missions.

During both OEF and OIF many of the CRAF aircraft were not allowed to fly into either Iraq or Afghanistan. The major reason the CRAF aircraft were limited was because the Department of Defense would not use the CRAF aircraft in dangerous or chemical weapons environments.³⁰ The DOD adopted this policy because CRAF aircrews were not prepared to work in those types of environments. Civilian aircraft are simply not equipped with any type of defensive equipment to help them defeat any of the many possible threats they could encounter. The majority of the CRAF missions had to fly into a secure airport, where the troops and cargo were then transferred to other modes of transportation to get to their final destination. Again, this continues to increase the requirements on the inter-theater airlift.

One of the newest proposals to help increase the capabilities of the CRAF is to make a civilian version of the C-17, which then could be used as part of the CRAF fleet. This would be a great asset to the military's mobility fleet. It would be the first civilian aircraft built with the same capabilities as the military aircraft. If this were to happen, the military would have an instant increase in its MTM/D requirement without the associated costs. To continue developing this idea, (which is supported by General Handy,³¹) a civilian carrier such as Federal Express or United Parcel Service who is able to use this type of aircraft in their daily operations has to be identified. A determination also has to be made as to whether or not Air Mobility Command will be able to give up any aircraft from the production line to the buyer. This is a difficult dilemma since AMC is still in dire need of all the aircraft it can currently procure.³² If a civilian carrier who would be able to effectively use this aircraft could be found then it would be in the military's best interest to pursue this option. It would provide an improvement to airlift capability while helping to decrease the costs associated with building a military only aircraft. The cost per plane would be able to be reduced with the extra aircraft bought. The military would not have to

spend the money to buy the extra aircraft, but would be able to use them whenever the CRAF was called upon for help. At the same time the military would be able to lease the aircraft and crew to perform specific missions.

RECOMMENDATION

As the Air Force continues its transformation to an Air Expeditionary Force and the Army transforms to a smaller, more mobile and lethal force, both will require rapid global mobility. For the Commander of USTRANSCOM to be able to help the Air Force and Army accomplish these goals, Air Mobility Command must increase its capabilities. This is especially true if the new Mobility Requirements Study does in fact increase the MTM/D requirement to at least 60 MTM or more. To accomplish this, the Air Force will need to buy the 222 C-17's for which General Handy is asking. If the MTM/D increases above the 60 MTM/D threshold, then the Air Force will have to buy something closer to 300 C-17's. At the same time the Air Force will have to complete the upgrades to the 112 C-5 aircraft to improve their reliability. This is especially important since the C-5 moved almost fifty percent of all cargo into both Iraq and Afghanistan without fanfare.

These purchases and upgrades would allow some of the C-17s to provide inter-theater airlift, thus helping improve the Army's capability. The government should push strongly to find a civilian buyer for the C-17 aircraft. This would allow an increase in capability without some of the associated costs of buying extra aircraft. It would also allow the C-17 manufacturing line to stay open increasing the time for the Air Force to make the decisions on how many aircraft it will need in the future. While all of this is being accomplished the Air Force will need to begin development of the next generation airlifter so that the aging C-5's can be replaced in approximately 30 years.

Transformation of the Army into its smaller more mobile force will determine how the troops and equipment will be transported. If the rapid force has to be transported by air then the Army needs to ensure both its Stryker vehicles and the new Future Combat System are able to fit onto the aircraft the Air Force provides. If the Air Force is not capable of transporting the equipment then the Army will not have a rapid mobile force and will be forced back into the old way of doing business by pre-positioning equipment all over the world.

CONCLUSION

According to AFDD1-1 rapid global mobility is the backbone for sustained combat operations.³³ For the United States to continue to fight the Global War on Terrorism, joint transformation of the Air Force and Army has to occur. Together the Air Force and Army have

to continually develop systems which will complement each other and help to ensure that the United States is able to rapidly deploy its forces to any area in the world. These forces need to be able to be deployed as a complete entity with nothing left behind. The ability to defeat the enemy in two regional wars will not be accomplished if the Air Force does not have the equipment to transport the Army to its destination. At the same time those wars will not be won, if the new force structure of the Army is not able to fit onto the aircraft the Air Force has procured.

WORD COUNT=5499

ENDNOTES

¹ Department of the Air Force, *Air Force Doctrine Document 2-6, Air Mobility Operations*, (Washington, D.C.: U.S. Department of the Air Force, 25 June 1999), 1.

² U.S. Army War College, *How the Army Runs: A Senior Leader Reference Handbook*, (Carlisle, PA: U.S. Army War College, 2003), 1.

³ Richard B. Myers, *National Military Strategy of the United States of America 2004*, (Washington, D.C.: The Pentagon, 2004).

⁴ Department of Defense, *Mobility Requirements Study 2005*, (Washington, D.C.: U.S. Department of Defense, January 2001).

⁵ Sandra I. Erwin, "Airlift Shortfalls Blamed on Aging Aircraft," *National Defense*, February 2001, 15.

⁶ Frank Wolfe, "Mobility Study Foresees at Least Six More C-17's Than Planned," *Defense Daily*, 29 January 2001, 1.

⁷ Ibid., 1.

⁸ Ibid., 1.

⁹ Robert Wall, "Demand Pressure," *Aviation Week and Space Technology*, 2 August 2004, 31.

¹⁰ Ibid.

¹¹ Robert Wall, "Pentagon Scrubs Airlift Needs for Homeland Defense, War Effort," *Aviation Week and Space Technology*, 28 January 2002, 62.

¹² Frank Wolfe, "Homeland Defense May Increase Strategic Airlift Requirements," *Defense Daily International*, 28 September 2001, 1.

¹³ Air Force, "C-130 Hercules Fact Sheet," September 2003; available from <<http://www.af.mil/factsheets/factsheet>>; Internet; accessed 4 January 2005.

¹⁴ Air Force, "C-17 Globemaster III Fact Sheet," October 2004; available from <<http://www.af.mil/factsheets/factsheet>>; Internet; accessed 4 January 2005.

¹⁵ Joseph N. Mait and Richard M. Kugler, "Alternative Approaches to Army Transformation," *Defense Horizons* July 2004, 1.

¹⁶ Ibid., 1.

¹⁷ Ibid., 1.

¹⁸ Ibid., 6.

¹⁹ Mike Allen and Josh White, "President Outlines Overseas Troop Cut," *Washington Post*, 17 August 2004, sec A, 1.

²⁰ Department of Defense, *Defense Planning Guidance Fiscal Years 2004-2009*, (Washington, D.C.: U.S. Department of Defense, May 2002).

²¹ Department of Defense, *Mobility Requirements Study 2005*, (Washington, D.C.: U.S. Department of Defense, January 2001).

²² Ibid.

²³ John A. Tirpak, "The Airlift Shortfall Deepens," *Air Force Magazine*, April 2001, 57.

²⁴ John A. Tirpak, "The Airlift Gap," *Air Force Magazine*, October 2004, 36.

²⁵ John A. Tirpak, "The Airlift Shortfall Deepens," *Air Force Magazine*, April 2001, 57.

²⁶ Department of Defense, *Mobility Requirements Study 2005*, (Washington, D.C.: U.S. Department of Defense, January 2001).

²⁷ John A. Tirpak, "The Airlift Gap," *Air Force Magazine*, October 2004, 36.

²⁸ John A. Tirpak, "Saving the Galaxy," *Air Force Magazine*, January 2004, 35.

²⁹ Ibid., 32.

³⁰ Frank Wolfe, "Mobility Plan Insufficient to Meet Military Strategy, Draft Study Says," *Defense Daily*, 24 October, 2000 pg 1.

³¹ John A. Tirpak, "The Airlift Gap," *Air Force Magazine*, October 2004, p 36.

³² Ibid.

³³ Department of the Air Force, *Air Force Doctrine Document 2-6, Air Mobility Operations* (Washington, D.C.: U.S. Department of the Air Force, 25 June 1999), 1.

BIBLIOGRAPHY

- Allen, Mike, and Josh White. "President Outlines Overseas Troop Cut." *Washington Post*, 17 August 2004, sec. A, 1.
- Erwin, Sandra I. "Airlift Shortfalls Blamed on Aging Aircraft," *National Defense*, February 2001, 15-17.
- Mait, Joseph N., and Richard M. Kugler. "Alternative Approaches to Army Transformation." *Defense Horizons*, July 2004, 1.
- Tirpak, John A. "Mobility Boom." *Air Force Magazine*, June 2002, 26-31.
- Tirpak, John A. "Saving the Galaxy." *Air Force Magazine*, January 2004, 35-39.
- Tirpak, John A. "The Airlift Gap." *Air Force Magazine*, October 2004, 36-39.
- Tirpak, John A. "The Airlift Shortfall Deepens." *Air Force Magazine*, April 2001, 57-60.
- Tirpak, John A. "The Squeeze on Air Mobility." *Air Force Magazine*, July 2003, 22-29.
- U.S. Army War College. *How the Army Runs: A Senior Leader Reference Handbook*. Carlisle, PA: U. S. Army War College, 2003.
- U.S. Department of Defense. *Defense Planning Guidance Fiscal Years 2004-2009*. Washington, D.C.: U.S. Department of Defense, May 2002.
- U.S. Department of Defense. *Mobility Requirements Study 2005*. Washington, D.C.: U.S. Department of Defense, January 2001.
- U.S. Department of the Air Force. *Air Force Doctrine Document 2-6, Air Mobility Operations*. Washington, D.C.: U.S. Department of the Air Force, 25 June 1999, 1.
- U.S. Joint Chiefs of Staff. *National Military Strategy of the United States of America 2004*. Washington, D.C.: U.S. Joint Chiefs of Staff, 2004.
- U.S. Air Force. "C-130 Hercules Fact Sheet." September 2003: Available from <<http://www.af.mil/factsheets/factsheet>>. Internet: Accessed 4 January 2005.
- U.S. Air Force. "C-141 Starlifter." September 2004: Available from <<http://www.af.mil/factsheets/factsheet>>. Internet: Accessed 4 January 2005.
- U.S. Air Force. "C-17 Globemaster III Fact Sheet." October 2004: Available from <<http://www.af.mil/factsheets/factsheet>>. Internet: Accessed 4 January 2005.
- U.S. Air Force. "C-5 Galaxy Fact Sheet." August 2003: Available from <<http://www.af.mil/factsheets/factsheet>>. Internet: Accessed 4 January 2005.
- U.S. Air Force. "KC-10 Extender." October 2003: Available from <<http://www.af.mil/factsheets/factsheet>>. Internet: Accessed 4 January 2005.

- Wall, Robert. "Demand Pressure." *Aviation Week and Space Technology*, 2 August 2004, 31-33.
- Wall, Robert. "Pentagon Scrubs Airlift Needs for Homeland Defense, War Effort." *Aviation Week and Space Technology*, 28 January 2002, 62.
- Wolfe, Frank. "Homeland Defense May Increase Strategic Airlift Requirements." *Defense Daily International*, 28 September 2001, 1.
- Wolfe, Frank. "Mobility Plan Insufficient to Meet Military Strategy, Draft Study Says." *Defense Daily*, 24 October 2000, 1.
- Wolfe, Frank. "Mobility Study Foresees at Least Six More C-17's Than Planned." *Defense Daily*, 29 January 2001, 1.
- Wolfe, Frank. "Mobility Study Recommends Higher Tonnage Requirement." *Defense Daily*, 13 October 2000, 1.
- Wolfe, Frank. "Zinni: Strategic Mobility CENTCOM's Greatest Need." *Defense Daily*, 1 March 2000, 1.